

WHAT IS CLAIMED IS:

1. An apparatus for multiplexing a specialized resource of a network peripheral, comprising:

a plurality of specialized resources that provide services to subscriber calls contacting a network;

a plurality of modules that manage a number of specialized resource groups;

a main processor that manages the plurality of modules and collects state information from each of the plurality of modules; and

a resource management block that restores a service to a subscriber call, disrupted by a faulty one of the plurality of specialized resources, in accordance with the state information collected by the main processor.

2. The apparatus of claim 1, wherein the resource management block includes:

a means for isolating the faulty one of the plurality of specialized resources;

a means for collecting information about the service performed by the isolated specialized resource and information about a particular specialized resource available to replace the isolated specialized resource;

a means for generating a multiplexing message, according to the collected information, and transmitting the multiplexing message to one of the plurality of modules having the particular specialized resource available; and

• a means for resuming the service disrupted by the faulty one of the plurality of specialized resources.

3. The apparatus of claim 2, wherein the multiplexing message is generated for each subscriber call disrupted by a faulty one of the plurality of specialized resources.

4. The apparatus of claim 2, wherein the multiplexing message includes information identifying a number of a particular module having the particular specialized resource available, an index of the particular specialized resource, and a type of the service disrupted by the faulty one of the plurality of specialized resources.

5. The apparatus of claim 2, wherein the multiplexing message is dispersively transmitted to particular modules, of the plurality of modules, having a small load and the particular specialized resource available.

6. The apparatus of claim 1, wherein the state information comprises specialized resource number information, indicating the number of specialized resources supported by the corresponding module, and a specialized resource state bit map indicating a state of each of the specialized resources supported by the corresponding module.

7. The apparatus of claim 1, wherein the state information is collected from all of the plurality of modules of the network peripheral.

8. The apparatus of claim 1, wherein the resource management block is a virtual device implemented by software.

9. A method of multiplexing a specialized resource of an intelligent network-intelligent peripheral (In-IP), comprising:

collecting state information of specialized resources from all modules of an IP;

checking whether an error occurred, in each of the specialized resources, by analyzing the collected state information;

isolating a pertinent specialized resource that experienced the error;

collecting information about a service performed by the isolated specialized resource and information about a particular specialized resource available to replace the isolated specialized resource;

generating a multiplexing message, according to the collected information, and transmitting the multiplexing message to a particular module having the particular specialized resource available; and

resuming the service interrupted by the error, in accordance with the multiplexing message.

10. The method of claim 9, wherein the state information comprises number information, indicating the number of specialized resources supported by the corresponding module, and a state bit map indicating a state of each of the supported special resources.

11. The method of claim 9, wherein the multiplexing message is generated for each service disrupted by a faulty one of the specialized resources.

12. The method of claim 9, wherein the multiplexing message includes information identifying a number of the particular module having the particular specialized resource available, an index of the particular specialized resource, and the service.

13. The method of claim 9, wherein the multiplexing message is dispersively transmitted to selected ones of the modules having a small load and the particular specialized resource available.

14. The method of claim 9, wherein the state information is periodically collected from all of the modules.

15. A method of multiplexing a resource in a network peripheral, wherein the network peripheral includes a plurality of modules and each of the plurality of modules includes a plurality of resources, comprising:

detecting a fault in a resource;

identifying a service performed by the resource experiencing the fault;

identifying another resource that provides the service and that is available, among the plurality of modules;

assigning the other resource to support the service for a subscriber call, based on an assignment scheme.

16. The method of claim 15, wherein the assignment scheme prioritizes each of multiple other resources that provide the service and that are available, based on a processing load of a corresponding module providing the other resource.

17. The method of claim 16, further comprising removing the module having the detected fault from further use.

18. The method of claim 16, further comprising removing the resource having the detected fault from further use.

19. An apparatus for multiplexing a specialized resource of a network peripheral, comprising:

a plurality of modules that have specialized resources; and

a plurality of processors that control the plurality of modules, wherein

the plurality of processors can replace any one of the plurality of modules experiencing a defect with any other of the plurality of modules.

20. The apparatus of claim 19, wherein a particular module selected to replace a defective module is selected in accordance with respective processing loads of the plurality of modules.